their effects upon the weather conditions will show their importance from the forecasters point of view.

A high, from the time it first appears, moves in a general easterly direction over well known tracks, with a velocity dependent upon the conditions surrounding it. Sometimes, however, its movement is so sluggish as to be hardly perceptible, and it hangs over a section of the country with a persistency that both surprises and confuses the forecaster. These cases are rare, and one noticing a high charted on this morning's weather map may look for it tomorrow at a point farther east, and so on, until it moves out of range of the Weather Bureau stations.

An area of high pressure when once formed can be counted upon to last for some time. This being so, and from the fact that air is continually flowing out from all sides as surface winds, it is evident that to maintain its characteristics air must be supplied from some source in proportion to that which flows out. Hence it would seem that in the higher strata of the atmosphere air must be moving inward and sinking downward, thus making it reasonable to believe that the pressure in the upper regions of the air is least above the spot where it is greatest on the earth's surface.

During the summer months areas of high pressure are characterized by dry weather; the days are warm, bright, and cloudless. The nights are cool, with clear and brilliant skies; and, as the dry air aids radiation from the earth's surface, the temperature quickly cools to the dew point, and heavy deposits of dew occur, and sometimes frost. Under these conditions the daily range of temperature is generally much greater than at other times.

Areas of high pressure during the winter months are more decided in their characteristics; they move with greater speed, and as the days are short and insolation weak, they are generally attended by low temperatures. Cold days and colder nights prevail.

The blizzards that sweep with icy breath over the west and northwest, the marrow-chilling northers of Texas, and all the cold waves are first located within areas of high pressure, and, as they advance with the frosty breath of colder climes, the forecaster notes their position and studies their progress.

As has been stated, the low is the opposite of the high, and it plays an equally important part in our weather changes. The air in the center of an area of low pressure being rarer, and consequently lighter than under ordinary conditions, tends to disturb the equilibrium of the surrounding air, causing it to expand and rush toward the low.

The term "cyclone" was originally applied to lows and storm areas for the reason that it was believed the wind blew around them in circles, but since the science of meteorology has advanced it has been demonstrated that the wind blows in toward the low's center in a spiral curve with a velocity dependent upon the gradient or steepness of the depression. As the center of an area of low pressure remains the lowest in spite of the fact that the surface winds are pouring in from every direction, the logical deduction is that the air must rise around the center and flow out from above, thus making an inward and upward whirl, or eddy, of the atmosphere. The eddy, however, is not stationary but is always moving, sometimes increasing in strength as it advances and again spreading out and becoming less intense.

The weather changes associated with a low are proofs of its being an eddy of ascending air from the fact that on its approach clouds are formed, the temperature rises, and often rain, accompanied by high winds, occurs. Then comes clearing weather, a sudden shift of wind, and a sharp rise of barometer, all showing that the storm has passed and that a high, with its quota of fair weather, will soon move in and assume control.

Like the restless billows of the ocean, the atmosphere is ever surging, and pursuant to the wise and economic laws of nature, compensates us with clear and sunny skies for the days that were dark and dreary.

NOTES BY THE EDITOR.

ORIGIN OF DESCENDING GUSTS OF WIND.

Mr. Charles A. Love, voluntary observer at Aurora, Ill., writing with reference to a storm at Laurelwood Park, 1 mile north of Batavia and 8 miles north of Aurora, suggests an experiment that might be carried out on a small scale in a laboratory, if any of the physicists who have the necessary conveniences at hand would kindly devote so much attention to meteorological problems. Mr. Love says:

A visit to the place showed that a hard windstorm from the southwest had swept through the grove at Laurelwood Park in the afternoon of August 28, and that the damage had been confined for the most part to a limited portion of the natural grove of tall black oaks of about a quarter of a mile in extent each way. * * * The branches of the trees fell toward the northeast, and the roof of the dancing pavilion was pushed eastward. If the wind had been a lifting one it should have carried the roof clear of the floor, but it did not do so, and in this case as in others where hail falls, the wind appears to have been crushing instead of lifting. Reports from Kaneville, about 12 miles southwest from Laurelwood Park, report a wind, rain, and hailstorm at 5:25 p. m. from the southwest. First, there was a cold gust from the northwest, and then the wind veered to the southwest. Is it possible for a stratum of cold dry air to get in between an upper and lower rain cloud and freeze the rain from the upper cloud while falling through the cold dry stratum, if such a stratum be between 800 and 2,500 feet deep? I should like an opportunity to let water drops fall from some very high building and observe how great a falling distance and how low a temperature of the air is required to produce hail. The downward rush of cold air displacing the hot air at the surface of the ground appears to account for the peculiar crushing and pushing of the wind in the storm at Laurelwood.

Approximate calculations of the power of cold rain and hail to cool the air and cause it to descend are said to show that only gentle winds can be formed in this way. The Editor hopes that well-devised experiments may be instituted in order to test these calculations. The subject is too difficult and too important to meteorology to be settled by crude estimates.

THE POSTAL TELEGRAPH CLOCK AND WEATHER BULLETIN.

According to the Electrical Engineer of September 2, the Postal Telegraph Cable Company is in cooperation with the United States Time and Weather Service Company of New York, and is making rapid headway in the establishment throughout the city of tall handsome clocks which shall exhibit standard time, not only by the face of the clock but by the dropping of a time ball at noon, so that "Postal Time" is already becoming a standard well-known phrase. These clocks have been set up already in many western cities also, and will undoubtedly meet a popular want.

The clock is within a case about 18 feet high, which is surmounted by a short staff supporting a wind vane, and down which a gilded ball drops about 3 feet each day at noon. Over the clock dial is the name of the "Postal Company." Under the dials are large panels about 18 by 63 inches, which are filled up with local and special advertising. Beneath these are smaller panels which give each morning the latest Weather Bureau reports and forecasts two or three hours be-